
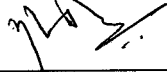





CONTROLS AND INSTRUMENTATION/QA/FB

STANDARD QUALITY PLAN FOR WIRED REMOTE AND LOCAL CONTROL PANEL

REV	DATE	PREPARED	REVIEWED	APPROVED	REVISION HISTORY
00	21/02/2013	RM.VAIRAVAN 	N.SRISHAR 	K.PALANIVEL 	Initial release.



Sl. No	Component & Operation	Characteristics	Class	Type of Check	Quantum of check		Ref Doc. & Acceptance STD	Format of record	AGENCY			Remarks
					M	B/C			M	B	C	
A	Raw materials & Brought Out items inspection											
1	CRCA Sheet	a. Material	Major	CHEM	Sample	-	IS-513 BHEL Appd.Drg.	TC	V	V	-	
		b. Thickness	Major	MEAS	100%	-	BHEL Appd. Drg.	LGB	P	-	-	
2	Gasket	a. Dimension	Major	MEAS	Sample	-	BHEL Appd. Drg.	TC/ LGB	P	-	-	EMC Compatible if mentioned in PO
		b. Hardness	Major	MEAS	Sample	-	BHEL Appd. Drg.	TC/ LGB	V	-	-	
3	Terminals	a. Type, Size & Make	Major	VISU	100%	-	BHEL Appd. Drg.	TR	V	-	-	
4	Indication Lamps/ MCB/ Switches Contactors, Transformers	a. Type, Size, Make & Ratings	Major	VISU	100%	-	BHEL Appd. Drg.	TR	V	-	-	
		b. Functional	Major	MEAS	100%	-	Mfr. Std.	TR	V	-	-	
B	In-Process Inspection											
1	Fabrication	a. Dimension	Critical	MEAS	100%	-	BHEL Appd. Drg.	TR	P	-	-	
		b. Cutout Dimension	Critical	MEAS	100%	-	BHEL Appd. Drg.	TR	P	-	-	
		c. Cable Gland Plate	Critical	VISU	100%	-	BHEL Appd. Drg.	TR	P	-	-	
		d. Gasket arrangement	Critical	VISU	100%	-	BHEL Appd. Drg.	TR	P	-	-	
2	Pre Treatment	a. 7 Tank process	Critical	VISU	100%	-	Mfr. Std.	TR	P	-	-	
3	Inner & Outer Paint/ Powder Coating	a. Shade	Major	VISU	Sample	-	BHEL Appd. Drg. IS 5/RAL	TR	V	-	-	
		b. Finish	Major	VISU	Sample	-	BHEL Appd. Drg.	TR	V	-	-	
		c. Thickness	Major	MEAS	Sample	-	BHEL Appd. Drg.	TR	P	-	-	
4	Assembly	a. Termination/ Wiring	Major	PHYS	100%	-	BHEL Appd. Drg.	TR	P	-	-	
		b. Gasketting	Major	VISU	100%	-	BHEL Appd. Drg.	TR	P	-	-	
		c. Earthing	Major	PHYS	100%	-	BHEL Appd. Drg.	TR	P	-	-	
		d. Check Arrangement/ Layout of Components & Mountings	Major	VISU	100%	-	BHEL Appd. Drg.	TR	P	-	-	
		e. Wire Size/ Colour Code/ Ferruling	Major	VISU	100%	-	BHEL Appd. Drg.	TR	P	-	-	
		f. Name Plates & Labels	Major	VISU	100%	-	BHEL Appd. Drg.	TR	P	-	-	

M- MANUFACTURER/ SUB-VENDOR; B - BHEL / TPI ; C - CUSTOMER / TPI
P - PERFORM; W - WITNESS V - VERIFICATION;



BHARAT HEAVY ELECTRICALS LIMITED
TIRUCHIRAPPALLI - 620014

QUALITY PLAN FOR
WIRED REMOTE AND LOCAL CONTROL PANEL

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Sl. No	Component & Operation	Characteristics	Class	Type of Check	Quantum of check		Ref Doc. & Acceptance STD	Format of record	AGENCY			Remarks
					M	B/C			M	B	C	
		g. Verification of components/ Rating/ Arrangements/ Location for easy accessibility and maintenance	Major	VISU	100%	-	BHEL Appd. Drg.	TR	P	-	-	
		h. Door Alignment	Major	VISU	100%	-	BHEL Appd. Drg.	TR	P	-	-	
C	Finished Product Inspection											
01	Routine Tests	a. Overall dimension including Sheet steel thickness	Major	MEAS	100%	10% or min. 1 panel	BHEL Appd. Drg.	TR	P	W	-	
		b. Paint Shade, Thickness & Peel Off Test	Critical	MEAS	Sample	At random places	BHEL Appd. Drg. IS 5/RAL	TR	P	W	-	
		c. Verification of Bill of Material for make, Type, Ratings	Major	VISU	100%	10% or min. 1 panel	BHEL Appd. Drg.	TR	P	W	-	
		d. Functional test for Door limit switch and illumination lamp	Major	ELEC	100%	100%	BHEL Appd. Drg.	TR	P	W	-	
		e. Terminal Arrangement & verification of terminal nos. for external connection	Major	VISU	100%	100%	BHEL Appd. Drg.	TR	P	W	-	
		f. Shrouding of power terminals/ Warning stickers	Major	VISU	100%	100%	BHEL Appd. Drg.	TR	P	W	-	
		g. Door Alignment/ Door Locking	Major	VISU	100%	100%	BHEL Appd. Drg.	TR	P	W	-	
		h. Provision of name plates and labels	Major	VISU	100%	100%	BHEL Appd. Drg.	TR	P	W	-	
		i. Layout of components	Critical	VISU	100%	100%	BHEL Appd. Drg.	TR	P	W	-	
		j. Functional check	Major	ELEC	100%	100%	BHEL Appd. Drg.	TR	P	W	-	
		k. IR-HV-IR Test	Major	MEAS	100%	100%	Mfr. Std.	TR	P	W	-	
02	Type Test	Degree of enclosure protection	Major	ENVI	One of design	One of design	BHEL Appd. Drg. IS/ IEC 60947	TC	P	V	-	

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P - PERFORM; **W** - WITNESS **V** - VERIFICATION;



D.NOTES:

1.LEGENDS:

ELEC	:	Electrical	MEAS	:	Measurement
PHYS	:	Physical	TC	:	Test certificate
VISU	:	Visual	CHEM	:	Chemical
LGB	:	Log Book	IIR	:	Internal Inspection Report
TR	:	Test Report	Mfr. Std.	:	Manufacturer Standard

2. The vendor shall arrange all testing facilities at their works. Tests for which facilities are not available are to be carried out at Govt. / NABL Accredited Lab at vendor cost.
3. Through Log Book / any other documents available at the vendor's works, it shall be possible to correlate the finished products with raw material and in process stage checks / inspection carried out.
4. All Measuring and Testing Instruments shall be periodically calibrated from recognized test houses & certificates made available during inspection for verification.

5. Type test certificate shall not be earlier than 5 years from the date of Purchase enquiry.
6. Vendor to give tentative inspection program in advance and confirm exact date two weeks in advance for arranging BHEL's inspection.
7. Packing shall be as per the "PACKING PROCEDURE" indicated in the specification.
8. BHEL Approved Drawings shall be used for Inspection.

C. REFERENCE STANDARDS:

(For Indicated Standards Refer the Latest Version)

IS 5	:	Colours for ready mixed paints and enamels
IS/IEC 60947	:	General rules for low voltage switchgear (Degrees of enclosure protection offered by enclosures)
IS 513	:	Cold Reduced Low Carbon Steel Sheet and Strip

SQP71R0.DOC